

<110> Japan Tobacco, Inc.

<120> Novel Cytidine Deaminase

<140>

<141>

<150> JP11-087192

<151> 1999-03-29

<150> JP11-178999

<151> 1999-06-24

<150> JP11-371382

<151> 1999-12-27

<160> 35

<170> PatentIn Ver. 2.1

<210> 1

<211> 2440

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (93).. (689)

<220>

<221> 5' UTR

<222> (1).. (92)

<220>

<221> 3' UTR

<222> (690).. (2440)

<400> 1

ggcacgagca gcactgaagc agccttgctt gaagcaagct tcctttggcc taagactttg 60

agggagtcaa gaaagtcacg ctggagaccg at atg gac agc ctt ctg atg aag 113

Met Asp Ser Leu Leu Met Lys

1

5

caa aag aag ttt ctt tac cat ttc aaa aat gtc cgc tgg gcc aag gga 161

Gln Lys Lys Phe Leu Tyr His Phe Lys Asn Val Arg Trp Ala Lys Gly

10

15

20

09966380-09966301

cgg cat gag acc tac ctc tgc tac gtg gtg aag agg aga gat agt gcc 209
 Arg His Glu Thr Tyr Leu Cys Tyr Val Val Lys Arg Arg Asp Ser Ala
 25 30 35

acc tcc tgc tca ctg gac ttc ggc cac ctt cgc aac aag tct ggc tgc 257
 Thr Ser Cys Ser Leu Asp Phe Gly His Leu Arg Asn Lys Ser Gly Cys
 40 45 50 55

cac gtg gaa ttg ttg ttc cta cgc tac atc tca gac tgg gac ctg gac 305
 His Val Glu Leu Leu Phe Leu Arg Tyr Ile Ser Asp Trp Asp Leu Asp
 60 65 70

cgg ggc cgg tgt tac cgc gtc acc tgg ttc acc tcc tgg agc ccg tgc 353
 Pro Gly Arg Cys Tyr Arg Val Thr Trp Phe Thr Ser Trp Ser Pro Cys
 75 80 85

tat gac tgt gcc cgg cac gtg gct gag ttt ctg aga tgg aac cct aac 401
 Tyr Asp Cys Ala Arg His Val Ala Glu Phe Leu Arg Trp Asn Pro Asn
 90 95 100

ctc agc ctg agg att ttc acc gcg cgc ctc tac ttc tgt gaa gac cgc 449
 Leu Ser Leu Arg Ile Phe Thr Ala Arg Leu Tyr Phe Cys Glu Asp Arg
 105 110 115

aag gct gag cct gag ggg ctg cgg aga ctg cac cgc gct ggg gtc cag 497

0096630-092301

Lys Ala Glu Pro Glu Gly Leu Arg Arg Leu His Arg Ala Gly Val Gln

120

125

130

135

atc ggg atc atg acc ttc aaa gac tat ttt tac tgc tgg aat aca ttt 545

Ile Gly Ile Met Thr Phe Lys Asp Tyr Phe Tyr Cys Trp Asn Thr Phe

140

145

150

gta gaa aat cgt gaa aga act ttc aaa gcc tgg gaa ggg cta cat gaa 593

Val Glu Asn Arg Glu Arg Thr Phe Lys Ala Trp Glu Gly Leu His Glu

155

160

165

aat tct gtc cgg cta acc aga caa ctt cgg cgc atc ctt ttg ccc ttg 641

Asn Ser Val Arg Leu Thr Arg Gln Leu Arg Arg Ile Leu Leu Pro Leu

170

175

180

tac gaa gtc gat gac ttg cga gat gca ttt cgt atg ttg gga ttt tga 689

Tyr Glu Val Asp Asp Leu Arg Asp Ala Phe Arg Met Leu Gly Phe

185

190

195

aagcaacctc ctggaatgac acacgtgatg aaattttctct gaagagactg gatagaaaaa 749

caacccttca actacatggtt tttctttctta agtactcact tttataagtg tagggggaaa 809

ttatatgact ttttaaaaaa tacttgagct gcacaggacc gccagagcaa tgatgtaact 869

gagcttgctg tgcaacatcg ccatctactg gggaacagca taacttccag actttgggtc 929

09969990-09991

gtgaatgatg ctcttttttt tcaacagcat ggaaaagcat atggagacga ccacacagtt 989

tgttacaccc accctgtgtt ccttgattca ttggaattct caggggtatc agtgacggat 1049

tcttctattc tttccctcta aggctcactt tcaggggtcc ttttctgaca aggtcacggg 1109

gctgtcctac agtctctgtc tgagcaatca caagccattc tctcaaaaac attaatactc 1169

aggcacatgc tgtatgtttt cactgtccgt cgtgtttttc acatttgtat gtgaaagggc 1229

ttgggggtggg atttgaagaa tgcacgatcg cctctgggtg atttcaataa aggatcttaa 1289

aatgcagatg aggactacga agaaatcact ctgaaaatga gttcacgcct caagaagcaa 1349

atccccctgga aacacagact ctttttcatt tttaatgtca ttagtttact cacagtctta 1409

tcaagaagaa gagtccaagg gtccaacca attttcagat cgcgtccctt aaacatcagt 1469

aattctgtta aagggatcaa acatccttat ttcttaacta actgggtgcct tgctgtagag 1529

aaaggagcaa agcgcacga tccaaagtat atagttatca tagccaggaa ccgtactcg 1589

ttttccatta caaatggcaa atttctcccc gggtctctct catagtgcct gagacggacc 1649

acggagggtga tgaacctccg gattctctgg cccaacacgg tggaagctct gcaagggcgc 1709

0956600-033001

<210> 2

<211> 198

<212> PRT

<213> Mus musculus

<400> 2

Met Asp Ser Leu Leu Met Lys Gln Lys Lys Phe Leu Tyr His Phe Lys

1

5

10

15

Asn Val Arg Trp Ala Lys Gly Arg His Glu Thr Tyr Leu Cys Tyr Val

20

25

30

Val Lys Arg Arg Asp Ser Ala Thr Ser Cys Ser Leu Asp Phe Gly His

35

40

45

Leu Arg Asn Lys Ser Gly Cys His Val Glu Leu Leu Phe Leu Arg Tyr

50

55

60

Ile Ser Asp Trp Asp Leu Asp Pro Gly Arg Cys Tyr Arg Val Thr Trp

65

70

75

80

Phe Thr Ser Trp Ser Pro Cys Tyr Asp Cys Ala Arg His Val Ala Glu

85

90

95

Phe Leu Arg Trp Asn Pro Asn Leu Ser Leu Arg Ile Phe Thr Ala Arg

100

105

110

Leu Tyr Phe Cys Glu Asp Arg Lys Ala Glu Pro Glu Gly Leu Arg Arg

115

120

125

Leu His Arg Ala Gly Val Gln Ile Gly Ile Met Thr Phe Lys Asp Tyr

130

135

140

T03250-0339660

Phe Tyr Cys Trp Asn Thr Phe Val Glu Asn Arg Glu Arg Thr Phe Lys

145 150 155 160

Ala Trp Glu Gly Leu His Glu Asn Ser Val Arg Leu Thr Arg Gln Leu

165 170 175

Arg Arg Ile Leu Leu Pro Leu Tyr Glu Val Asp Asp Leu Arg Asp Ala

180 185 190

Phe Arg Met Leu Gly Phe

195

<210> 3

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially

synthesized primer sequence, AID138

<400> 3

ggaattcgcc atggacagcc ttctgatgaa

30

<210> 4

<211> 30

09966660-09966660

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, AID161

<400> 4

gccgctcgag tcaaaatccc aacatacgaa

30

<210> 5

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, AID118

<400> 5

ggctgaggtt agggttccat ctacg

25

<210> 6

<211> 25

T00250-0999660

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, AID119

<400> 6

gagggagtca agaaagtcac gctgg

25

<210> 7

<211> 2818

<212> DNA

<213> Homo sapiens

<220>

<221> 5' UTR

<222> (1).. (79)

<220>

<221> CDS

<222> (80).. (676)

<220>

<221> 3' UTR

108260-0839560

<400> 7

agacactctg gacaccact atg gac agc ctc ttg atg aac cgg agg aag ttt 112

1 5 10

Leu Tyr Gln Phe Lys Asn Val Arg Trp Ala Lys Gly Arg Arg Glu Thr

15 20 25

Tyr Leu Cys Tyr Val Val Lys Arg Arg Asp Ser Ala Thr Ser Phe Ser

30 35 40

Leu Asp Phe Gly Tyr Leu Arg Asn Lys Asn Gly Cys His Val Glu Leu

45 50 55

Leu Phe Leu Arg Tyr Ile Ser Asp Trp Asp Leu Asp Pro Gly Arg Cys

60 65 70 75

tac cgc gtc acc tgg ttc acc tcc tgg agc ccc tgc tac gac tgt gcc 352

90

105

120

135

155

170

185

gac tta cga gac gca ttt cgt act ttg gga ctt tga tagcaacttc 686

Asp Leu Arg Asp Ala Phe Arg Thr Leu Gly Leu

190

195

caggaatgtc acacacgatg aaatatctct gctgaagaca gtggataaaa aacagtcctt 746

caagtcttct ctgtttttat tcttcaactc tcactttctt agagtttaca gaaaaaatat 806

ttatatacga ctctttaaaa agatctatgt cttgaaaata gagaaggaac acaggtctgg 866

ccagggacgt gctgcaattg gtgcagtttt gaatgcaaca ttgtccccta ctgggaataa 926

cagaactgca ggacctggga gcatcctaaa gtgtcaacgt ttttctatga cttttaggta 986

ggatgagagc agaaggtaga tcctaaaaag catggtgaga ggatcaaattg tttttatata 1046

aacatccttt attatttgat tcatttgagt taacagtggg gttagtgata gatttttcta 1106

ttcttttccc ttgacgttta ctttcaagta acacaaactc ttccatcagg ccatgatcta 1166

taggacctcc taatgagagt atctgggtga ttgtgacccc aaaccatctc tccaaagcat 1226

taatatccaa tcatgcgctg tatgttttaa tcagcagaag catgttttta tgtttgtaca 1286

aaagaagatt gttatgggtg gggatggagg tatagacat gcattgtcac cttcaagcta 1346

09966830-09301

ctttaataaa ggatcttaaa atgggcagga ggactgtgaa caagacaccc taataatggg 1406

ttgatgtctg aagtagcaaa tcttctggaa acgcaaactc ttttaaggaa gtcctaatt 1466

tagaaacacc cacaaacttc acatatcata attagcaaac aattggaagg aagttgcttg 1526

aatgttgggg agaggaaaat ctattggctc tcgtgggtct ctcatctca gaaatgccaa 1586

tcaggtcaag gtttgctaca ttttgatatgt gtgtgatgct tctcccaaag gtatattaac 1646

tatataagag agttgtgaca aaacagaatg ataaagctgc gaaccgtggc acacgctcat 1706

agttctagct gcttgggagg ttgaggaggg aggatggctt gaacacaggt gttcaaggcc 1766

agcctgggca acataacaag atcctgtctc tcaaaaaaaaa aaaaaaaaaa aagaaagaga 1826

gagggccggg cgtggtggct cacgcctgta atcccagcac tttgggaggc cgagccgggc 1886

ggatcacctg tggtcaggag tttgagacca gcctggccaa catggcaaaa ccccgctctgt 1946

actcaaatg caaaaattag ccaggcgtgg tagcaggcac ctgtaatccc agctacttgg 2006

gaggctgagg caggagaatc gcttgaaccc aggaggtgga ggttgcaagta agctgagatc 2066

gtgccgttgc actccagcct gggcgacaag agcaagactc tgtctcagaa aaaaaaaaaa 2126

aaaagagaga gagagagaaa gagaacaata tttgggagag aaggatgggg aagcattgca 2186

aggaaattgt gctttatcca acaaaatgta aggagccaat aagggatccc tatttgtctc 2246

tttgggtgtc tatttgtccc taacaactgt ctttgacagt gagaaaaata ttcagaataa 2306

ccatatccct gtgccgttat tacctagcaa cccttgcaat gaagatgagc agatccacag 2366

gaaaacttga atgcacaact gtcttatttt aatcttattg tacataagtt tgtaaaagag 2426

ttaaaaattg ttacttcatg tattcattta tattttatat tattttgcgt ctaatgattt 2486

tttattaaca tgatttcctt ttctgatata ttgaaatgga gtctcaaagc ttcataaatt 2546

tataacttta gaaatgattc taataacaac gtatgtaatt gtaacattgc agtaatggtg 2606

ctacgaagcc atttctcttg atttttagta aacttttatg acagcaaatt tgcttctggc 2666

tcactttcaa tcagttaaat aaatgataaa taatttttga agctgtgaag ataaaaatacc 2726

aaataaaaata atataaaagt gattttatatg aagttaaaat aaaaaatcag tatgatggaa 2786

taaacttgaa aaaaaaaaaa aaaaaaaaaa aa 2818

<210> 8

<211> 198

<212> PRT

<213> Homo sapiens

<400> 8

Met Asp Ser Leu Leu Met Asn Arg Arg Lys Phe Leu Tyr Gln Phe Lys

1 5 10 15

Asn Val Arg Trp Ala Lys Gly Arg Arg Glu Thr Tyr Leu Cys Tyr Val

20 25 30

Val Lys Arg Arg Asp Ser Ala Thr Ser Phe Ser Leu Asp Phe Gly Tyr

35 40 45

Leu Arg Asn Lys Asn Gly Cys His Val Glu Leu Leu Phe Leu Arg Tyr

50 55 60

Ile Ser Asp Trp Asp Leu Asp Pro Gly Arg Cys Tyr Arg Val Thr Trp

65 70 75 80

Phe Thr Ser Trp Ser Pro Cys Tyr Asp Cys Ala Arg His Val Ala Asp

85 90 95

Phe Leu Arg Gly Asn Pro Asn Leu Ser Leu Arg Ile Phe Thr Ala Arg

100 105 110

Leu Tyr Phe Cys Glu Asp Arg Lys Ala Glu Pro Glu Gly Leu Arg Arg

115 120 125

Leu His Arg Ala Gly Val Gln Ile Ala Ile Met Thr Phe Lys Asp Tyr

130 135 140

Phe Tyr Cys Trp Asn Thr Phe Val Glu Asn His Glu Arg Thr Phe Lys

145 150 155 160

T09260" 09090650

Ala Trp Glu Gly Leu His Glu Asn Ser Val Arg Leu Ser Arg Gln Leu

165

170

175

Arg Arg Ile Leu Leu Pro Leu Tyr Glu Val Asp Asp Leu Arg Asp Ala

180

185

190

Phe Arg Thr Leu Gly Leu

195

<210> 9

<211> 5514

<212> DNA

<213> Homo sapiens

<220>

<221> intron

<222> (1).. (1031)

<220>

<221> exon

<222> (1032).. (1118)

<220>

<221> intron

<222> (1119).. (5514)

T03260-092601

<400> 9

acagacgaat acatgggtcca agctagggct attgatttga aaatcatcaa ggtatagatg 60
 gtatcaaagg cttgaggcag gaagagagca gagaccctag ctgcattgct tagcattgca 120
 tccctagcac ctggcatagt ttccattaac agtaggcatg aagtatctac tcagtgaata 180
 aatagaatgc atatgggcta cagtaggaga gagaaataaa atctttaata gaccaagtgc 240
 tatgagagca caaaattaaa gtcttttatt tgaagatctt agcctgtttt ccaaattcag 300
 tgcagccagt tagacactga ttctgtctgg tgaacaagc atttttgtat tttgggggac 360
 tgctgtctgt tctgactcca aattaaggat tttttttttt tctaaaaaag atggctcag 420
 caaaaatcac tcttttgtgt aaatatctag tcttcaagca attcttgtaa tgcaatcaga 480
 aagaaaaaaa tccatggttt gggaggcaaa atttttgtgt tctaaattct atataactga 540
 gttcatttgc ttaactgcaa agcaggagct gctagtgcct gtctgtactg aggttcagag 600
 agactgtggg aatatggggg aattagaggc tatctgaggc tcttcaacac aataacccaa 660
 gaagctatct aaatgctctt taaggtatct acataaatat tactattctc attgtgcttt 720
 tattttgtgt tatcatgatt ataattgaag tgtctactgt tactgcctcc tgatctttgc 780
 tagctatgga gcatggactg ggctttttaga gcagcagccc caaaggaacc taaacattaa 840
 agcagagctg cctcaatgg tttaacctgt gtgactctgc ctatgacagc cccaccacc 900
 catcttcact ggatccaaat caggagcaag gccgttgggg tacctgggtg gggtgatgct 960
 gtcaggggag gagcccaaaa gggcaagctc aaatttgaat gtgaagggcc aatgcaactgt 1020
 cagactgaga cagagaacca tcattaattg aagtgaagatt tttctggcct gagacttgca 1080
 gggaggcaag aagacactct ggacaccact atggacaggt aaagaggcag tcttctcgtg 1140
 ggtgattgca ctggccttcc tctcagagca aatctgagta atgagactgg tagctatccc 1200
 tttctctcat gtaactgtct gactgataag atcagcttga tcaatatgca tatatatttt 1260
 ttgatctgtc tccttttctt ctattcagat cttatacgt gtcagcccaa ttctttctgt 1320
 ttcagacttc tcttgatttc cctctttttc atgtggcaaa agaagtagtg cgtacaatgt 1380
 actgattcgt cctgagattt gtaccatggt tgaactaat ttatggtaat aatattaaca 1440
 tagcaaatct ttagagactc aaatcatgaa aaggtaatag cagtactgta ctaaaaacgg 1500

F03350-0999660

tagtgctaatt tttcgtaata attttgtaaa tattcaacag taaaacaact tgaagacaca 1560
 ctttcctagg gaggcgttac tgaaataatt tagctatagt aagaaaattt gtaatttttag 1620
 aaatgccaag cattctaaat taattgcttg aaagtcacta tgattgtgtc cattataagg 1680
 agacaaattc attcaagcaa gttatttaat gttaaaggcc caattgtag gcagttaatg 1740
 gcacttttac tattaactaa tctttccatt tgttcagacg tagcttaact tacctcttag 1800
 gtgtgaattt ggtaagggtc ctcataatgt ctttatgtgc agtttttgat aggttattgt 1860
 catagaactt attctattcc tacatttatg attactatgg atgtatgaga ataacaccta 1920
 atccttatac ttacctcaa ttttaactcct ttataaagaa ctacattac agaataaaga 1980
 ttttttaaaa atatatTTTT ttgtagagac agggcttag cccagccgag gctggtctct 2040
 aagtcctggc ccaagcgatc ctctgcctg ggctcctaa agtgctggaa ttatagacat 2100
 gagccatcac atccaatata cagaataaag atttttaatg gaggatttaa tgttcttcag 2160
 aaaattttct tgaggtcaga caatgtcaaa tgtctcctca gtttacctg agattttgaa 2220
 aacaagtctg agctataggt ccttggaag ggtccattgg aaatacttgt tcaaagtaaa 2280
 atggaaagca aaggtaaaat cagcagttga aattcagaga aagacagaaa aggagaaaag 2340
 atgaaattca acaggacaga agggaaatat attatcatta aggaggacag tatctgtaga 2400
 gctcattagt gatggcaaaa tgacttggtc aggattattt ttaaccgct tgtttctggt 2460
 ttgcacggct ggggatgcag ctagggttct gcctcaggga gcacagctgt ccagagcagc 2520
 tgtcagcctg caagcctgaa acactccctc ggtaaagtcc ttcctactca ggacagaaat 2580
 gacgagaaca gggagctgga aacaggcccc taaccagaga agggaagtaa tggatcaaca 2640
 aagttaacta gcaggtcagg atcacgcaat tcatttcaact ctgactggtg acatgtgaca 2700
 gaaacagtgt aggcttattg tattttcatg tagagtagga cccaaaaatc caccctaaagt 2760
 ctttatcta tgccacatcc ttcttatcta tacttccagg acacttttcc ttccttatga 2820
 taaggctctc tctctctcca cacacacaca cacacacaca cacacacaca cacacacaca 2880
 cacaaacaca caccctgcca accaagggtgc atgtaaaaag atgtagattc ctctgccttt 2940
 ctcatctaca cagcccgagg gggtaagtta atataagagg gatttattgg taagagatga 3000
 tgcttaattc gttaacaact gggcctcaaa gagagaattt cttttcttct gtacttatta 3060

agcacctatt atgtgttgag cttatatata caaagggtta ttatatgcta atatagtaat 3120
 agtaatgktg gttggtacta tggtaattac cataaaaatt awtatccttt taaaataaag 3180
 ctaattatta ttggatcttt tttagtattc attttatgtt ttttatgttt ttgatttttt 3240
 aaaagacaat ctacacctgt taccaggtt ggagtgagc ggtgcaatca tagctttctg 3300
 cagtcttgaa ctctgggct caagcaatcc tcctgccttg gcctcccaaa gtgttgggat 3360
 acagtcatga gccactgcat ctggcctagg atccatttag attaaaatat gcattttaaa 3420
 ttttaaata atatggctaa tttttacctt atgtaatgtg tatactggta ataatctag 3480
 tttgtgcct aaagttttaa gtctttcca ataagcttca tgtacgtgag gggagacatt 3540
 taaagtgaag cagacagcca ggtgtggtg ctacgcctg taatccagc actctgggag 3600
 gctgaggtg gtggatcgt tgagccctgg agttcaagac cagcctgagc aacatggcaa 3660
 aacctgttt ctataacaaa aattagcgg gcattgtggt atgtgcctgt ggtccagct 3720
 actagggggc tgaggcagga gaatttttg agccaggag gtcaaggctg cactgagcag 3780
 tgcttgcgc actgcactcc agcctgggtg acaggaccag acctgcctc aaaaaataa 3840
 gaagaaaaat taaaataaaa tggaaacaac tacaaagagc tgttgccta gatgagctac 3900
 ttagtiagc tgatattttg gtatttaact tttaaagtca gggctgttca cctgcactac 3960
 attattaaaa tatcaattct caatgtatat ccacacaaag actggtacgt gaatttcat 4020
 agtaccttta ttcacaaaac ccaaagtag agactatcca aatatccatc aacaagtga 4080
 caaataaaca aatgtgcta tatccatgca atggaatacc acctgcagt acaaaggaag 4140
 aagctacttg gggatgaatc ccaaagtcac gacgctaaat gaaagagtca gacatgaag 4200
 aggagataat gtatgccata cgaaattcta gaaaatgaaa gtaacttata gttacagaaa 4260
 gcaaatcagg gcaggcatag aggtcacac ctgtaatccc agcactttga gaggccagct 4320
 gggaagattg ctagaactca ggagttcaag accagcctg gcaacacagt gaaactccat 4380
 tctccacaaa aatgggaaaa aaagaaagca aatcagtgtt tgtcctgttg ggagggaag 4440
 gactgcaaag aggaagaag ctctgggtgg gtgaggtggt tgattcaggt tctgtatcct 4500
 gactgtggtg gcagtttggg gtgtttacat ccaaaaatat tcgtagaatt atgcatctta 4560
 aatgggtgga gtttactgta tgtaaattat acctcaatgt aagaaaaaat aatgtgtaag 4620

aaaagtttca attctcttgc cagcaaacgt tattcaaatt cctgagccct ttacttcgca 4680
 aattctctgc acttctgccc cgtaccatta ggtgacagca ctagctccac aaattggata 4740
 aatgcatttc tggaaaagac tagggacaaa atccaggcat cacttgtgct ttcatatcaa 4800
 ccacgctgta cagcttgtgt tgctgtctgc agctgcaatg gggactcttg atttctttaa 4860
 ggaaacttgg gttaccagag tatttccaca aatgctattc aaattagtgc ttatgatatg 4920
 caagacactg tgctaggagc cagaaaacaa agaggaggag aaatcagtca ttatgtggga 4980
 acaacatagc aagatattta gatcattttg actagttaaa aaagcagcag agtacaaaat 5040
 cacacatgca atcagtataa tccaaatcat gtaaataatgt gcctgtagaa agactagagg 5100
 aataaacaca agaatcttaa cagtcattgt cattagacac taagtctaata tattattatt 5160
 agacactatg atatttgaga tttaaaaaat ctttaatat tttaaattta gagctcttct 5220
 atttttccat agtattcaag tttgacaatg atcaagtatt actctttctt tttttttttt 5280
 tttttttttt ttgagatgg agttttggtc ttgttgccca tgctggagtg gaatggcatg 5340
 aycatagctc actgcaacct ccacctcctg ggttcaagca aagctgtcgc ctcagcctcc 5400
 cgggtagatg ggattacagg cgcccaccac cacactcggc taatgtttgt attttttagta 5460
 gagatgggggt ttcacatgt tggccaggct ggtctcaaac tcctgacctc agag 5514

<210> 10

<211> 6564

<212> DNA

<213> Homo sapiens

<400> 10

gggggcctgt aatcccagct actcaggagg ctgaggcagg aggatccgcg gagcctggca 60
 gatctgcctg agcctgggag gttgaggcta cagtaagcca agatcatgcc agtatacttc 120
 agcctgggag acaaagttag accgtaacaa aaaaaaaaaa atttaaaaaa agaaatttag 180

atcaagatcc aactgtaaaa agtggcctaa acaccacatt aaagagtttg gagttttattc 240
 tgcaggcaga agagaaccat caggggggtct tcagcatggg aatggcatgg tgcacctggt 300
 ttttgtgaga tcatggtggt gacagtgtgg ggaatgttat tttggaggga ctggaggcag 360
 acagaccggt taaaaggcca gcacaacaga taaggaggaa gaagatgagg gcttggaccg 420
 aagcagagaa gagcaaacag ggaaggtaca aattcaagaa atattggggg gtttgaatca 480
 acacatttag atgattaatt aaatatgagg actgaggaat aagaaatgag tcaaggatgg 540
 ttccaggctg ctaggctgct tacctgaggt ggcaaagtcg ggaggagtgg cagttagga 600
 cagggggcag ttgaggaata ttgtttgat cttttgagt ttgaggtaca agttggacac 660
 ttaggtaaag actggagggg aaatctgaat atacaattat gggactgagg aacaagtta 720
 ttttattttt tgtttcgttt tcttgttgaa gaacaaattt aattgtaatc ccaagtcac 780
 agcatctaga agacagtggc aggaggtgac tgtcttgtgg gtaagggttt ggggtccttg 840
 atgagtatct ctcaattggc cttaaataata agcaggaaaa ggagtttatg atggattcca 900
 ggctcagcag ggctcaggag ggctcaggca gccagcagag gaagtcagag catcttcttt 960
 ggttagccc aagtaatgac ttcttaaaa agctgaagga aaatccagag tgaccagatt 1020
 ataaactgta ctcttgcat tctctccct cctctcacc acagcctctt gatgaaccgg 1080
 aggaagtttc ttaccaatt caaaaatgtc cgctgggcta agggctcggc tgagacctac 1140
 ctgtgctacg tagtgaagag gcgtgacagt gctacatcct tttactgga ctttggttat 1200
 cttcgcaata aggtatcaat taaagtcagc ttgcaagca gtttaatggt caactgtgag 1260
 tgcttttaga gccacctgct gatggtatta cttccatcct tttttggcat ttgtgtctct 1320
 atcacattcc tcaaatcctt ttttttattt cttttccat gtccatgcac ccatattaga 1380
 catggcccaa aatatgtgat ttaattctc cccagtaatg ctgggcaccc taataccact 1440
 cttccttca gtgccaagaa caactgctc caaactgttt accagcttcc ctgagcatct 1500
 gaatgcctt tgagattaat taagctaaaa gcatttttat atgggagaat attatcagct 1560
 tgtccaagca aaaattttaa atgtgaaaaa caaattgtgt ctttaagcatt tttgaaaatt 1620
 aaggaagaag aatttgggaa aaaattaacg gtggttcaat tctgttttcc aaatgatttc 1680
 tttccctcc tactcacatg ggctgtaggc cagtgaatac attcaacatg gtgatcccca 1740

gaaaactcag agaagcctcg gctgatgatt aattaaattg atctttcggc tacccgagag 1800
 aattacattt ccaagagact tcttcaccaa aatccagatg ggtttacata aacttctgcc 1860
 catgggtatc tctctctcc taacacgtg tgacgtctgg gcttggtgga atctcaggga 1920
 agcatccgtg ggggtggaagg tcacgtctg gctcgttggt tgatggttat attaccatgc 1980
 aattttcttt gcttacattt gtattgaata catcccaatc tcttctctat tcggtgacat 2040
 gacacattct atttcagaag gctttgattt tatcaagcac tticatttac ttctcatggc 2100
 agtgcctatt acttctctta caatacccat ctgtctgctt taccaaaatc tatttccct 2160
 tttcagatcc tcccaaatgg tctcataaaa ctgtctgcc tccacctagt ggtccaggta 2220
 tatttccaca atgttacatc aacaggcaact tctagccatt ttccttctca aaagggtgcaa 2280
 aaagcaactt cataaacaca aattaaatct tcggtgaggt agtgtgatgc tgcttctcc 2340
 caactcagcg cacttctct tctcattcc aaaaaaccc atagccttcc ttcactctgc 2400
 aggactagt ctgccaaggg ttcagctcta cctactggtg tgctcttttg agcaagttgc 2460
 ttagcctctc tgtaacacaa ggacaatagc tgcaagcatc ccaaagatc attgcaggag 2520
 acaatgacta aggctaccag agcgcgaata aaagtcagt aatttttagcg tggctctctc 2580
 tgtctctcca gaacggctgc cacgtggaat tgctcttct cgcctacatc tcggactggg 2640
 acctagacc tggecgctgc taccgcgtca cctggttcac ctctggagc cctgctacg 2700
 actgtgccc acatgtggcc gactttctgc gagggaaccc caacctcagt ctgaggatct 2760
 tcaccgcgc cctctacttc tgtgaggacc gcaaggctga gcccaggagg ctgcggcggc 2820
 tgcaccgcgc cgggggtgcaa atagccatca tgaccttcaa aggtgcgaaa gggccttccg 2880
 cgcaggcgca gtgcagcagc ccgcattcgg gattgcgatg cggaatgaat gagttagtgg 2940
 ggaagctcga ggggaagaag tgggcgggga ttctggttca cctctggagc cgaaattaaa 3000
 gattagaagc agagaaaaga gtgaatggct cagagacaag gcccagagga aatgagaaaa 3060
 tggggccagg gttgcttct tccctcgat ttggaacctg aactgtcttc taccctcata 3120
 tccccgctt ttttctctt ttttttttt tgaagattat ttttactgct ggaatacttt 3180
 tgtagaaaac cacgaaagaa ctttcaaagc ctgggaaggg ctgcatgaaa attcagttcg 3240
 tctctccaga cagcttcggc gcatccttt ggtaaggggc ttcctcgtt tttaaatttt 3300

ctttctttct ctacagtctt ttttggagtt tegtatatatt cttatatattt cttattgttc 3360
aatcactctc agttttcadc tgatgaaaac tttattttctc ctccacatca gctttttctt 3420
ctgctgtttc accattcaga gccctctgct aaggttcctt ttccctccct tttctttctt 3480
ttgttgtttc acatctttta atttctgtct ctccccaggg ttgcgtttcc ttcttggtca 3540
gaattctttt ctcccttttt tttttttttt tttttttttt taaacaaaca aacaaaaaac 3600
ccaaaaaaac tctttcccaa ttactttct tccaacatgt tacaaagcca tccactcagt 3660
ttagaagact ctccggcccc accgaccccc aacctcgttt tgaagccatt cactcaattt 3720
gcttctctct ttctctacag cccctgtatg aggttgatga cttacgagac gcatttcgta 3780
ctttgggact ttgatagcaa cttccaggaa tgtcacacac gatgaaatat ctctgtgaa 3840
gacagtggat aaaaaacagt ccttcaagtc ttctctgttt ttattcttca actctcactt 3900
tcttagagtt tacagaaaaa atattttatat acgactcttt aaaaagatct atgtcttgaa 3960
aatagagaag gaacacaggt ctggccaggg acgtgctgca attggtgcag ttttgaatgc 4020
aacattgtcc cctactggga ataacagaac tgcaggacct gggagcatcc taaagtgtca 4080
acgtttttct atgactttta ggtaggatga gagcagaagg tagatcctaa aaagcatggt 4140
gagaggatca aatgttttta tatcaacatc ctttattatt tgattcattt gagttaacag 4200
tggtgttagt gatagatttt tctattcttt tcccttgacg ttactttca agtaacacaa 4260
actcttccat caggccatga tctataggac ctctaatga gagtatctgg gtgattgtga 4320
cccaaacca tctctccaaa gcattaatat ccaatcatgc gctgtatgtt ttaatcagca 4380
gaagcatgtt tttatgtttg tacaaaagaa gattgttatg ggtggggatg gaggtataga 4440
ccatgcatgg tcaccttcaa gtactttta taaaggatct taaaatgggc aggaggactg 4500
tgaacaagac accctaataa tgggttgatg tctgaagtag caaatcttct ggaaacgcaa 4560
actcttttaa ggaagtccct aatttagaaa caccacaaa cttcacatat cataattage 4620
aaacaattgg aaggaagttg ctggaatgtt ggggagagga aaatctattg gctctcgtgg 4680
gtctcttcat ctcagaaatg ccaatcaggt caaggtttgc tacattttgt atgtgtgtga 4740
tgcttctccc aaaggtatat taactatata agagagttgt gacaaaacag aatgataaag 4800
ctgcgaaccg tggcacacgc tcatagttct agctgcttgg gaggttgagg agggaggatg 4860

gcttgaacac aggtgttcaa ggccagcctg ggcaacataa caagatcctg tctctcaaaa 4920
 aaaaaaaaaa aaaaaagaaa gagagagggc cgggcgtggt ggetcacgcc tgtaatccca 4980
 gcactttggg aggccgagcc gggcggatca cctgtggtca ggagtttgag accagcctgg 5040
 ccaacatggc aaaaccccg tctgtactcaa aatgcaaaaa ttagccaggc gtggtagcag 5100
 gcacctgtaa tcccagctac ttgggaggct gaggcaggag aatcgcttga acccaggagg 5160
 tggaggttgc agtaagctga gatcgtgccg ttgcactcca gcctgggcga caagagcaag 5220
 actctgtctc agaaaaaaaa aaaaaaaga gagagagaga gaaagagaac aatatttggg 5280
 agagaaggat ggggaagcat tgcaaggaaa ttgtgcttta tccaacaaaa tgtaaggagc 5340
 caataaggga tccctatttg tctcttttgg tgtctatttg tccctaacaa ctgtctttga 5400
 cagtgagaaa aatattcaga ataaccatat cctgtgccg ttattaccta gcaacccttg 5460
 caatgaagat gaggagatcc acaggaaaac ttgaatgcac aactgtctta ttttaatttt 5520
 attgtacata agtttgtaaa agagttaaaa attgttactt catgtattca tttatatttt 5580
 atattatttt gcgtctaatg attttttatt aacaigattt cttttctga tatattgaaa 5640
 tggagtctca aagcttcata aatttataac tttagaaatg attctaataa caacgtatgt 5700
 aattgtaaca ttgcagtaat ggtgctacga agccatttct cttgattttt agtaaacttt 5760
 tatgacagca aatttgcttc tggtcactt tcaatcagtt aaataaatga taaataatti 5820
 tggaagctgt gaagataaaa taccaaataa aataatataa aagtattia tatgaagtta 5880
 aaataaaaaa tcagtatgat ggaataaact tgagagtcca gaagttatcc catacatctg 5940
 taatcaacta atttctcaca aggggtgtaag gaccattcaa tggagaaaaa atgatcttct 6000
 caacaaatgg tgctgagcta attggatatt acatgcaaag gaatgaattt gagtctctac 6060
 tacacaccat atataaaaat taattaaaaa ttcatcaa at acctaaatat tagagactaa 6120
 tttataaacc gtagagagaa acataggtta aaatgtttat ggcttttagat taggcaacag 6180
 cttcttaatt atgacatcaa aagcacaagc aaccaaagac aaaaataaat cagttggact 6240
 tcatcgaaat taaaaatctt tgtgcatcaa aggacactta gtaagaaagt gaaaagacaa 6300
 cccacagaag tgggagaaaa cacttgcaaa tcatatatct gataagggtt gtgatattat 6360
 gatatatata taggtttttg tccatagtct ctggcttata aacccctca cccttgttac 6420

096688-093966

agtcatttgt tataagggttg gatggtttag gccacagaag caaaactctc tctctcacct 6480
 tctccagccc tctgtctctt ggcacctcat tcttccctga ggccacatag aaactagaat 6540
 ctctcttcca caaggcggtc aaag 6564

<210> 11

<211> 87

<212> DNA

<213> Homo sapiens

<400> 11

agagaaccat cattaattga agtgagattt ttctggcctg agacttgag ggaggcaaga 60
 agacactctg gacaccacta tggacag 87

<210> 12

<211> 148

<212> DNA

<213> Homo sapiens

<400> 12

cctcttgatg aaccggagga agtttcttta ccaattcaaa aatgtccgct gggctaagg 60
 tcggcgtgag acctacctgt gctacgtagt gaagaggcgt gacagtgcta catccttttc 120
 actggacttt gggtatcttc gcaataag 148

<210> 13

<211> 271

<212> DNA

<213> Homo sapiens

<400> 13

aacggctgcc acgtggaatt gctcttctc cgctacatct cggactggga cctagaccct 60
ggccgctgct accgcgtcac ctggttcacc tectggagcc cctgctacga ctgtgcccga 120
catgtggccg actttctgcg agggaacccc aacctcagtc tgaggatctt caccgcgcgc 180
ctctacttct gtgaggaccg caaggctgag cccgaggggc tgcggcggct gcaccgcgcc 240
ggggtgcaaa tagccatcat gaccttcaaa g 271

<210> 14

<211> 116

<212> DNA

<213> Homo sapiens

<400> 14

attattttta ctgctggaat actttttagt aaaaccacga aagaactttc aaagcctggg 60
aagggtgca tgaattca gttegtctct ccagacagct tcggcgcatc cttttg 116

<210> 15

<211> 2172

<212> DNA

<213> Homo sapiens

<400> 15

cccctgtatg aggttgatga cttacgagac gcatttcgta ctttgggact ttgatagcaa 60
 cttccaggaa tgtcacacac gatgaaatat ctctgctgaa gacagtggat aaaaaacagt 120
 ccttcaagtc ttctctgttt ttattcttca actctcactt tcttagagtt tacagaaaaa 180
 atatttatat acgactcttt aaaaagatct atgtcttgaa aatagagaag gaacacaggt 240
 ctggccaggg acgtgctgca attggtgcag ttttgaatgc aacattgtcc cctactggga 300
 ataacagaac tgcaggacct gggagcatcc taaagtgtca acgtttttct atgactttta 360
 ggtaggatga gagcagaagg tagatcctaa aaagcatggt gagaggatca aatgttttta 420
 tatcaacatc ctttattatt tgattcattt gagttaacag tgggtgtagt gatagatttt 480
 tctattcttt tcccttgacg tttactttca agtaacacaa actcttccat caggccatga 540
 tctataggac ctccaatga gagtatctgg gtgattgtga ccccaaacca tctctccaaa 600
 gcattaatat ccaatcatgc gctgtatgtt ttaatcagca gaagcatgtt tttatgtttg 660
 tacaaaagaa gattgttatg ggtggggatg gaggtataga ccatgcatgg tcaccttcaa 720
 gctactttta taaaggatct taaaatgggc aggaggactg tgaacaagac accctaataa 780
 tgggttgatg tctgaagtag caaatcttct ggaaacgcaa actcttttaa ggaagtcctt 840
 aatttagaaa caccacaaa cttcacatat cataattagc aaacaattgg aaggaagttg 900
 cttgaatgtt ggggagagga aaatctattg gctctctggt gtctcttcat ctcagaaatg 960
 ccaatcaggt caaggtttgc tacattttgt atgtgtgtga tgcttctccc aaaggatatat 1020
 taactatata agagagttgt gacaaaacag aatgataaag ctgcgaaccg tggcacacgc 1080
 tcatagttct agctgcttgg gaggtigagg agggaggatg gcttgaacac aggtgttcaa 1140
 ggccagcctg ggcaacataa caagatcctg tctctcaaaa aaaaaaaaaa aaaaaagaaa 1200
 gagagagggc cgggcgtggt ggctcacgcc tgtaatccca gcactttggg aggccgagcc 1260
 gggcggatca cctgtgttca ggagtttgag accagcctgg ccaacatggc aaaaccccgt 1320
 ctgtactcaa aatgcaaaaa ttagccaggc gtggtagcag gcacctgtaa tcccagctac 1380

0996580.0996580.1

ttgggaggct gaggcaggag aatcgcttga acccaggagg tggaggttgc agtaagctga 1440
 gatcgtgccg ttgcactcca gcctgggcga caagagcaag actctgtctc agaaaaaaaa 1500
 aaaaaaaga gagagagaga gaaagagaac aatatttggg agagaaggat ggggaagcat 1560
 tgcaaggaaa ttgtgcttta tccaacaaaa tgtaaggagc caataaggga tccctatttg 1620
 tctcttttgg tgtctatttg tccctaacaa ctgtctttga cagtgagaaa aatattcaga 1680
 ataaccatat ccctgtgccg ttattaccta gcaacccttg caatgaagat gagcagatcc 1740
 acaggaaaac ttgaatgcac aactgtctta ttttaattctt attgtacata agtttgtaaa 1800
 agagttaaaa attgttactt catgtattca tttatatttt atattatttt gcgtctaata 1860
 attttttatt aacatgattt ctttttctga tatattgaaa tggagtctca aagcttcata 1920
 aatttataac tttagaaatg attctaataa caacgtatgt aattgtaaca ttgcagtaat 1980
 ggtgctacga agccatttct cttgattttt agtaaaacttt tatgacagca aatttgcttc 2040
 tggetcactt tcaatcagtt aaataaatga taaataattt tggaagctgt gaagataaaa 2100
 taccaaataa aataatataa aagtgattta tatgaagtta aaataaaaaa tcagtatgat 2160
 ggaataaaact tg 2172

<210> 16

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
 synthesized primer sequence, 170

<400> 16

gagaccgata tggacagcct tctga

25

<210> 17

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
syntjesized primer sequence, 181

<400> 17

tcacgtgtga cattccagga ggttgct

27

<210> 18

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, 22

<400> 18

TOP SECRET

gtagtgaaga ggcgtgacag tgctacatcc

30

<210> 19

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, 25

<400> 19

gttcctcgc agaaagtcgg ccacatg

27

<210> 20

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p3

<400> 20

T08260-0829560

gagtttgagg tacaagttgg acac

24

<210> 21

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p9

<400> 21

tatctctctct ctctaacac gct

23

<210> 22

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p10

<400> 22

0996680-09901

acaagctgat aatattctcc cat

23

<210> 23

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p12

<400> 23

tcttcggtga ggtagtgtga tg

22

<210> 24

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p14

<400> 24

T08360-0889960

agcctcttga tgaaccggag gaagtttctt

30

<210> 25

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p16

<400> 25

ttattgcgaa gataacaaaa gtccagtg

28

<210> 26

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p17

<400> 26

0906080-09001

tagaccctgg ccgctgctac c

21

<210> 27

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p19

<400> 27

cgcatcgcaa tcccgaatgc gg

22

<210> 28

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p26

<400> 28

00966330-093301

caaaaggatg cgccgaagct gtctggag

28

<210> 29

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p29

<400> 29

gttggaagaa agtaaattgg gaa

23

<210> 30

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p36

<400> 30

T03350-09999550

21

<211> 26

<213> Artificial Sequence

<223> Description of Artificial Sequence:Artificially synthesized primer sequence, p48

26

<211> 22

⟨213⟩ Artificial Sequence

<223> Description of Artificial Sequence:Artificially synthesized primer sequence, p59

<400> 32

agcatttgtg gaaatactct gg

22

<210> 33

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p85

<400> 33

aactttattt ctctccaca tcag

24

<210> 34

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Artificially
synthesized primer sequence, p86

<400> 34

T03250-08899660

gtgaatggct cagagacaag g

21

<210> 35

<211> 11204

<212> DNA

<213> Homo sapiens

<400> 35

aggttcagag agactgtggg aatatggggg aattagaggc tatctgaggc tcttcaacac 60
aataacccaa gaagctatctt aaatgctctt taaggtatctt acataaatat tactattctc 120
attgtgcttt tattttgtgt tatcatgatt ataattgaag tgtctactgt tactgcctcc 180
tgatctttgc tagctatgga gcatggactg ggctttttaga gcagcagccc caaaggaacc 240
taaacattaa agcagagctg ccctcaatgg ttaacctgt gtgactctgc ctatgacagc 300
cccaccacc catcttcact ggatccaaat caggagcaag gccgttgggg tacctggtgg 360
gggtgatgct gtcaggggag gagcccaaaa gggcaagctc aaatttgaat gtgaagggcc 420
aatgcactgt cagactgaga cagagaacca tcattaattg aagttagatt tttctggcct 480
gagacttgca gggaggcaag aagacactct ggacaccact atggacaggt aaagaggcag 540
tcttctcgtg ggtgattgca ctggccttcc tctcagagca aatctgagta atgagactgg 600
tagctatccc tttctctcat gtaactgtct gactgataag atcagcttga tcaatatgca 660
tatataatct ttgatctgtc tccctttctt ctattcagat cttatacgt gtcagcccaa 720
ttctttctgt ttcagacttc tcttgatttc cctctttttc atgtggcaaa agaagtagtg 780
cgtacaatgt actgattcgt cctgagattt gtacatgggt tgaaactaat ttatggtaat 840
aatattaaca tagcaaactt ttagagactc aaatcatgaa aaggtaatag cagtactgta 900
ctaaaaacgg tagtgctaatt tttcgtaata attttgtaa tattcaacag taaaacaact 960
tgaagacaca ctttcctagg gaggcgttac tgaaataatt tagctatagt aagaaaattt 1020

1.03250"03399550

gtaatthtag aaatgccaag cattctaaat taattgcttg aaagtcacta tgattgtgtc 1080
 cattataagg agacaaattc attcaagcaa gttatttaat gttaaaggcc caattgttag 1140
 gcagttaatg gcactttttac tattaactaa tctttccatt tgttcagacg tagcttaact 1200
 tacctcttag gtgtgaattt gggttaaggtc ctcataatgt ctttatgtgc agtttttgat 1260
 aggttattgt catagaactt attctattcc tacatttatg attactatgg atgtatgaga 1320
 ataacaccta atccttatac tttacctcaa ttttaactcct ttataaagaa cttacattac 1380
 agaataaaga ttttttaaaa atatattttt ttgtagagac agggctcttag cccagccgag 1440
 gctggtctct aagtcctggc ccaagcgatc ctcttgctg ggcctcctaa agtgctggaa 1500
 ttatagacat gagccatcac atccaatata cagaataaag atttttaatg gaggatttaa 1560
 tgttcttcag aaaattttct tgaggtcaga caatgtcaaa tgtctcctca gtttactg 1620
 agattttgaa aacaagtctg agctataggt ccttggtgaag ggtccattgg aaatacttgt 1680
 tcaaagtaaa atggaaagca aaggtaaaat cagcagttga aattcagaga aagacagaaa 1740
 aggagaaaag atgaaattca acaggacaga agggaaatat attatcatta aggaggacag 1800
 tatctgtaga gctcattagt gatggcaaaa tgacttggtc aggattattt ttaacccgct 1860
 tgtttctggt ttgcacggtt ggggatgcag ctagggttct gcctcaggga gcacagctgt 1920
 ccagagcagc tgtcagcctg caagcctgaa acactcctc ggtaaagtcc ttcctactca 1980
 ggacagaaat gacgagaaca gggagctgga aacaggcccc taaccagaga agggaagtaa 2040
 tggatcaaca aagttaacta gcaggtcagg atcacgcaat tcatttact ctgactggta 2100
 acatgtgaca gaaacagtgt aggcttattg tattttcatg tagagtagga cccaaaaatc 2160
 cacccaaagt cctttatcta tgccacatcc ttcttatcta tacttccagg acactttttc 2220
 ttccttatga taaggtctc tctctctcca cacacacaca cacacacaca cacacacaca 2280
 cacacacaca cacaacaca cccccgcca accaagggtc atgtaaaaag atgtagattc 2340
 ctctgccttt ctcatctaca cagcccagga gggtaagtta atataagagg gatttattgg 2400
 taagagatga tgcttaatct gtttaacact gggcctcaaa gagagaattt cttttcttct 2460
 gtacttatta agcacctatt atgtgttgag cttatatata caaagggtta ttatatgcta 2520
 atatagtaat agtaatgggt gttggtacta tggttaattac cataaaaatt attatccttt 2580

taaaataaag ctaattatta ttggaatcttt tttagtattc attttatgtt ttttatgttt 2640
 ttgatttttt aaaagacaat ctacacctgt taccaggct ggagtgcagt ggtgcaatca 2700
 tagctttctg cagtcttgaa ctctgggct caagcaatcc tctgccttg gcctcccaaa 2760
 gtgttgggat acagtcatga gccactgcat ctggcctagg atccatttag attaaaaat 2820
 gcattttaaa ttttaaaata atatggctaa tttttacctt atgtaatgtg tatactggta 2880
 ataaatctag tttgctgcct aaagtttaaa gtgctttcca ataagcttca tgtacgtgag 2940
 gggagacatt taaagtgaag cagacagcca ggtgtggtgg ctacgcctg taatcccagc 3000
 actctgggag gctgaggtgg gtggatcgct tgagccctgg agttcaagac cagcctgagc 3060
 aacatggcaa aacctgttt ctataacaaa aattagccgg gcatggtggc atgtgcctgt 3120
 ggtcccagct actagggggc tgaggcagga gaatctttgg agcccaggag gtcaaggctg 3180
 cactgagcag tgcttgccc actgcactcc agcctgggtg acaggaccag acctgcctc 3240
 aaaaaataa gaagaaaaat taaaaataa tggaacaac tacaagagc tgtgtccta 3300
 gatgagctac ttagttaggc tgatattttg gtatttaact tttaaagtca ggtctgtca 3360
 cctgcactac attattaaaa tatcaattct caatgtatat ccacacaaag actggtacgt 3420
 gaatgttcat agtaccttta ttacaaaaac ccaaagtag agactatcca aatatccatc 3480
 aacaagtga caaataaaca aaatgtgcta tatccatgca atggaatacc acctgcagt 3540
 acaaaggaag aagctacttg gggatgaatc ccaaagtcac gacgctaaat gaaagagtca 3600
 gacatgaagg aggagataat gtatgccata cgaaattcta gaaaatgaaa gtaacttata 3660
 gttacagaaa gcaaatcagg gcaggcatag aggctcacac ctgtaatccc agcactttga 3720
 gaggccagct gggaagattg ctagaactca ggagttcaag accagcctgg gcaacacagt 3780
 gaaactccat tctccacaaa aatgggaaaa aaagaaagca aatcagtggt tgtcctgtgg 3840
 ggaggggaag gactgcaaag aggggaagaag ctctgggtggg gtgaggtgg tgattcaggt 3900
 tctgtatcct gactgtggta gcagtttggg gtgtttacat caaaaaatat tcgtagaatt 3960
 atgcatctta aatgggtgga gtttactgta tgtaaattat acctcaatgt aagaaaaaat 4020
 aatgtgtaag aaaagtttca attctcttgc cagcaaagc tattcaaatt cctgagccct 4080
 ttacttcgca aattctctgc acttctgccc cgtaccatta ggtgacagca ctagctccac 4140

aaattggata aatgcatttc tggaaaagac tagggacaaa atccaggcat cacttgtgct 4200
 ttcatatcaa ccacgtgta cagcttgtgt tgctgtctgc agctgcaatg gggactcttg 4260
 atttctttaa ggaaacttgg gttaccagag tatttccaca aatgctattc aaattagtgc 4320
 ttatgatatg caagacactg tgctaggagc cagaaaacaa agaggaggag aaatcagtca 4380
 ttatgtggga acaacatagc aagatattta gatcattttg actagttaaa aaagcagcag 4440
 agtacaaaat cacacatgca atcagtataa tccaaatcat gtaaataatgt gcctgtagaa 4500
 agactagagg aataaacaca agaattctta cagtcattgt cattagacac taagtctaata 4560
 tattattatt agacactatg atatttgaga tttaaaaaat ctttaatat tttaaattta 4620
 gagctcttct atttttccat agtattcaag ttgacaatg atcaagtatt actctttctt 4680
 tttttttttt tttttttttt ttgagatgg agttttggtc ttgttgccca tgctggagtg 4740
 gaatggcatg accatagctc actgcaacct ccacctcctg ggttcaagca aagctgtcgc 4800
 ctgagcctcc cgggtagatg ggattacagg cgcccaccac cacactcggc taatgtttgt 4860
 atttttagta gagatggggg ttcaccatgt tggccaggct ggtctcaaac tctgacctc 4920
 agaggatcca cctgcctcag cctcccaaag tgctgggatt acagatgtag gccactgcgc 4980
 ccggccaagt attgctctta tacattaaaa aacagggtgtg agccactgcg cccagccagg 5040
 tattgtcttt atacattaaa aaataggccg gtgcagtggc tcacgcctgt aatcccagca 5100
 ctttgggaag ccaaggcggg cagaacaccc gaggtcagga gtccaaggcc agcctggcca 5160
 agatggtgaa acccgtctc tattaaaaat acaaacatta cctgggcatg atggtgggcg 5220
 cctgtaatcc cagctactca ggaggtgag gcaggaggat ccgcggagcc tggcagatct 5280
 gcctgagcct gggaggttga ggctacagta agccaagatc atgccagtat acttcagcct 5340
 gggcgacaaa gtgagaccgt aacaaaaaaaa aaaaaattta aaaaaagaaa tttagatcaa 5400
 gatccaactg taaaaagtgg cctaaacacc acattaaaga gtttggagtt tattctgcag 5460
 gcagaagaga accatcaggg ggtcttcagc atgggaatgg catggtgcac ctggtttttg 5520
 tgagatcatg gtggtgacag tgtggggaat gttatttttg agggactgga ggcagacaga 5580
 ccggttaaaa ggccagcaca acagataagg aggaagaaga tgagggcttg gaccgaagca 5640
 gagaagagca aacagggaag gtacaaattc aagaaatatt ggggggtttg aatcaacaca 5700

tttagatgat taattaaata tgaggactga ggaataagaa atgagtcaag gatggttcca 5760
ggctgctagg ctgcttacct gaggtggcaa agtcgggagg agtggcagtt taggacaggg 5820
ggcagttgag gaatattgtt ttgatcattt tgagtttgag gtacaagttg gacacttagg 5880
taaagactgg aggggaaatc tgaatataca attatgggac tgaggaacaa gtttatttta 5940
ttttttgttt cgttttcttg ttgaagaaca aatttaattg taatcccaag tcatcagcat 6000
ctagaagaca gtggcaggag gtgactgtct tgtgggtaag ggtttggggc ccttgatgag 6060
tatctctcaa ttggccttaa atataagcag gaaaaggagt ttatgatgga ttccaggctc 6120
agcagggctc aggagggctc aggcagccag cagaggaagt cagagcatct tctttgtttt 6180
agcccaagta atgacttcct taaaaagctg aaggaaaatc cagagtgacc agattataaa 6240
ctgtactctt gcattttctc tccctcctct caccacagc ctcttgatga accggaggaa 6300
gtttctttac caattcaaaa atgtccgctg ggctaagggt cggcgtgaga cctacctgtg 6360
ctacgtagtg aagaggcgtg acagtgtctac atccttttca ctggactttg gttatcttcg 6420
caataaggta tcaattaaag tcagctttgc aagcagttta atgggtcaact gtgagtgctt 6480
ttagagccac ctgctgatgg tattacttcc atcctttttt ggcatattgtg tctctatcac 6540
attcctcaaa tccttttttt tattttcttt tccatgtcca tgcaccata ttagacatgg 6600
cccaaaatat gtgatttaat tctcctccag taatgctggg caccctaata ccactccttc 6660
cttcagtgcc aagaacaact gctcccaaac tgtttaccag ctttctcag catctgaatt 6720
gcctttgaga ttaattaagc taaaagcatt tttatatggg agaataattat cagcttgctc 6780
aagcaaaaat tttaaattgtg aaaaacaaat tgtgtcttaa gcatttttga aaattaagga 6840
agaagaattt gggaaaaaat taacgggtgt tcaattctgt tttccaaatg atttcttttc 6900
cctcctactc acatgggtcg taggccagtg aatacattca acatgggtgat cccagaaaa 6960
ctcagagaag cctcggtcga tgattaatta aattgatctt tcggctaccc gagagaatta 7020
catttccaag agacttcttc accaaaatcc agatgggttt acataaactt ctgcccattg 7080
gtatctctc tctcctaaca cgtgtgacg tctgggcttg gtggaatctc agggaagcat 7140
ccgtgggggtg gaaggtcatc gtctggctcg ttgtttgatg gttatattac catgcaattt 7200
tctttgccta catttgtatt gaatacatcc caatctcctt cctattcggt gacatgacac 7260

attctatttc agaaggtttt gattttatca agcaatttca tttacttctc atggcagtgc 7320
 ctattacttc tcttacaata cccatctgtc tgctttacca aaatctattt ccccttttca 7380
 gatcctccca aatggtcctc ataaactgtc ctgcctccac ctagtgggcc aggtatattt 7440
 ccacaatgtt acatcaacag gcacttctag ccattttcct tctcaaaagg tgcaaaaagc 7500
 aacttcataa acacaaatta aatcttcggt gaggtagtgt gatgctgctt cctcccaact 7560
 cagcgcaactt cgtcttcctc attccacaaa aacccatagc cttccttcac tctgcaggac 7620
 tagtctgccc aagggttcag ctctacctac tgggtgtgctc ttttgagcaa gttgcttagc 7680
 ctctctgtaa cacaaggaca atagctgcaa gcatcccaa agatcattgc aggagacaat 7740
 gactaaggct accagagccg caataaaagt cagtgaattt tagcgtgggc ctctctgtct 7800
 ctccagaacg gctgccacgt ggaattgtc ttcctcogct acatctcgga ctgggaccta 7860
 gaccctggcc gctgctaccg cgtcacctgg ttcacctcct ggagccctg ctacgactgt 7920
 gcccgacatg tggccgactt tctgcgaggg aacccaacc tcagtctgag gatcttcacc 7980
 gcgcgcctct acttctgtga ggaccgcaag gctgagcccg aggggctgcg gcggctgcac 8040
 cgcgcggggg tgcaaatagc catcatgacc ttcaaagggt cgaaagggcc ttccgcgcag 8100
 gcgcagtga gcagcccgca ttccggattg cgatgcggaa tgaatgagtt agtggggaag 8160
 ctcgagggga agaagtgggc ggggattctg gttcacctct ggagccgaaa ttaaagatta 8220
 gaagcagaga aaagagtga tggtcagag acaaggcccc gaggaatga gaaaatgggg 8280
 ccagggttgc ttctttcccc tcgatttga acctgaactg tttcttacc ccatatcccc 8340
 gccttttttt cctttttttt ttttttgaag attattttta ctgctggaat actttttag 8400
 aaaaccacga aagaactttc aaagcctggg aagggtgca tgaaaattca gttcgtctct 8460
 ccagacagct tcggcgcatc ctttttgtaa ggggttcct cgctttttta attttcttct 8520
 tttctctaca gtcttttttg gaggttcgtat tatttcttat attttcttat tgttcaatca 8580
 ctctcagttt tcactgatg aaaactttat ttctctcca catcagcttt ttcttctgct 8640
 gtttcacat tcagagccct ctgctaaggt tcttttccc tcccttttct ttcttttgtt 8700
 gtttcacatc tttaaatttc tgtctctccc cagggttgcg ttctcttctt ggtcagaatt 8760
 cttttctcct tttttttttt tttttttttt ttttttaaac aaacaaacaa aaaacccaaa 8820

0956580-0956501

aaaactcttt cccaatttac ttctctccaa catgttacaa agccatccac tcagtttaga 8880
 agactctccg gccccaccga cccccaacct cgttttgaag ccattcactc aatttgcttc 8940
 tctctttctc tacagcccct gtatgagggt gatgacttac gagacgcatt tcgtactttg 9000
 ggactttgat agcaacttcc aggaatgtca cacacgatga aatatctctg ctgaagacag 9060
 tggataaaaa acagtccttc aagtcttctc tgtttttatt cttcaactct cactttctta 9120
 gagtttacag aaaaaatatt tatatacgac tctttaaaaa gatctatgtc ttgaaaatag 9180
 agaaggaaca caggtctggc caggacgtg ctgcaattgg tgcagttttg aatgcaacat 9240
 tgtcccttac tgggaataac agaactgcag gacctgggag catcctaaag tgtcaacgtt 9300
 tttctatgac ttttaggtag gatgagagca gaaggtagat cctaaaaagc atggtgagag 9360
 gatcaaatgt ttttatatca acatccttta ttatttgatt catttgagtt aacagtgggtg 9420
 ttagtgatag atttttctat tcttttccct tgacgtttac tttcaagtaa cacaaactct 9480
 tccatcaggc catgatctat aggacctcct aatgagagta tctgggtgat tgtgacccca 9540
 aaccatctct ccaaagcatt aatatccaat catgcgctgt atgttttaat cagcagaagc 9600
 atgtttttat gtttgtacaa aagaagattg ttatgggtgg ggatggaggt atagaccatg 9660
 catggtcacc ttcaagctac ttaataaaag gatcttaaaa tgggcaggag gactgtgaac 9720
 aagacaccct aataatgggt tgatgtctga agtagcaaat cttctggaag cgcaaactct 9780
 ttttaggaag tccctaattt agaaacaccc acaaacttca catatcataa ttagcaaaca 9840
 attggaagga agttgcttga atgttgggga gaggaaaatc tattggctct cgtgggtctc 9900
 ttcatctcag aaatgccaat caggtcaagg tttgctacat tttgtatgtg tgtgatgctt 9960
 ctcccaaagg tatattaact atataagaga gttgtgacaa aacagaatga taaagctgcg 10020
 aaccgtggca cacgctcata gttctagctg cttgggaggt tgaggaggga ggatggcttg 10080
 aacacaggtg ttcaaggcca gcctgggcaa cataacaaga tctgtctctt caaaaaaaaa 10140
 aaaaaaaaaa agaaagagag agggccgggc gtggtggctc acgcctgtaa tcccagcact 10200
 ttgggaggcc gagccgggcg gatcacctgt ggtcaggagt ttgagaccag cctggccaac 10260
 atggcaaaac ccggtctgta ctcaaaatgc aaaaattagc caggcgtggt agcaggcacc 10320
 tgtaaatccca gctacttggg aggttgagga aggagaatcg cttgaacca ggaggtggag 10380

gttgcagtaa gctgagatcg tgccgttgca ctccagcctg ggcgacaaga gcaagactct 10440
 gtctcagaaa aaaaaaaaaa aaagagagag agagagaaag agaacaatat ttgggagaga 10500
 aggatgggga agcattgcaa ggaaattgtg ctttatccaa caaaatgtaa ggagccaata 10560
 agggatccct atttgtctct tttggtgtct atttgtccct aacaactgtc tttgacagt 10620
 agaaaaatat tcagaataac catatccctg tgccgttatt acctagcaac ccttgcaatg 10680
 aagatgagca gatccacagg aaaacttgaa tgcacaactg tcttatttta atcttattgt 10740
 acataagttt gtaaaagagt taaaaattgt tacttcatgt attcatttat attttatatt 10800
 attttgcgtc taatgatttt ttattaacat gatttccttt tctgatatat tgaaatggag 10860
 tctcaaagct tcataaattt ataactttag aaatgattct aataacaacg tatgtaattg 10920
 taacattgca gtaatggtgc tacgaagcca tttctcttga tttttagtaa acttttatga 10980
 cagcaaattt gcttctggct cactttcaat cagttaaata aatgataaat aattttggaa 11040
 gctgtgaaga taaaatacca aataaaataa tataaaagtg atttatatga agttaaaata 11100
 aaaaatcagt atgatggaat aaacttgaga gtccagaagt tatcccatat atctgtaatc 11160
 aactaatttc tcacaagggt gtaaggacca ttcaatggag aaaa 11204

09966600-09966601